Summa Cutter Tools

User's Manual
Rev 7

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Welcome

Summa Cutter Tools is a program that bundles all the utility programs for the Summa Cutters.

It includes the installation files for the program Cutter tools.

Summa Cutter tools has a dual functionality, it is a program that has been a pioneer in controlling all parameters from the cutter via the computer. Used as such, it is a proven valuable tool for the operator, as well as for technicians.

Summa Cutter control can also be used as a file server for sending manually or automatic (as a spooler or as a barcode server) cut data to the cutter.

It has also the installation files for installing plug in in CorelDraw or Adobe Illustrator.

This manual is a reference guide for installing the program Summa Cutter tools
Minimum revisions needed for this manual:
Summa Cutter Tools revision 2.1.0.0
SummaCut: MD 9985 rev 026
S Class: MD9980 rev 040
S Class 2: MD9981 rev 015
OPOSCAM: only S Class 2 with camera driver minimum revision1.0.136

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1 Summa Cutter Tools

1.1 Introduction

Following useful tools can be installed with this program:

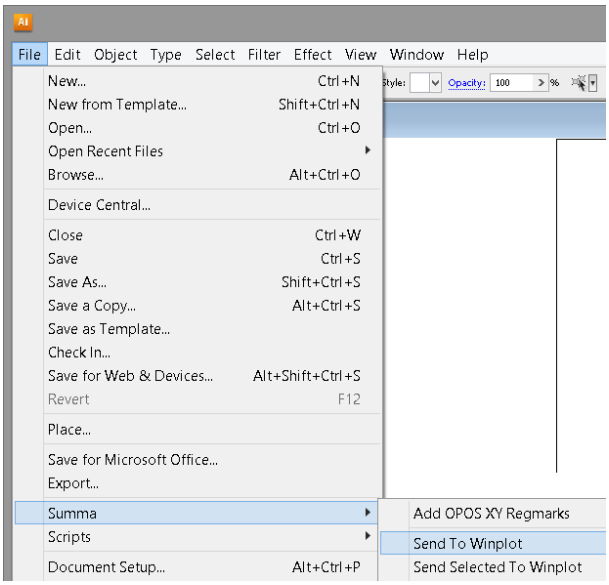
1. **Plug-in for WinPlot** for CorelDraw (from ver. 12 on) and Adobe Illustrator (from ver. CS on).

   - The plug-in for CorelDRAW installs an extra toolbar. Clicking on an icon in this toolbar automatically exports the current drawing into the program indicated in the toolbar.

   - The plug-in for Illustrator creates an extra menu under the 'file menu' called summa.

CorelDRAW Toolbar

Script added in Illustrator file menu

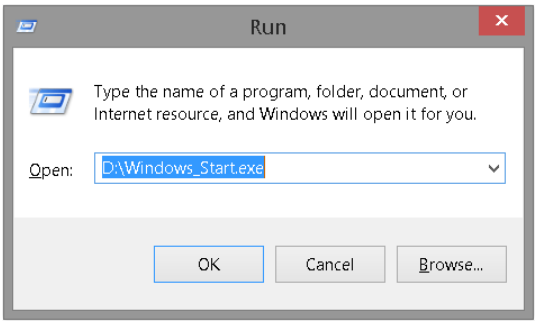


2. **Summa Cutter Control**. The Summa Cutter Control Program for Windows is a software utility to control the parameters of the cutter. It can also be used to diagnose, upgrade or calibrate the cutter.

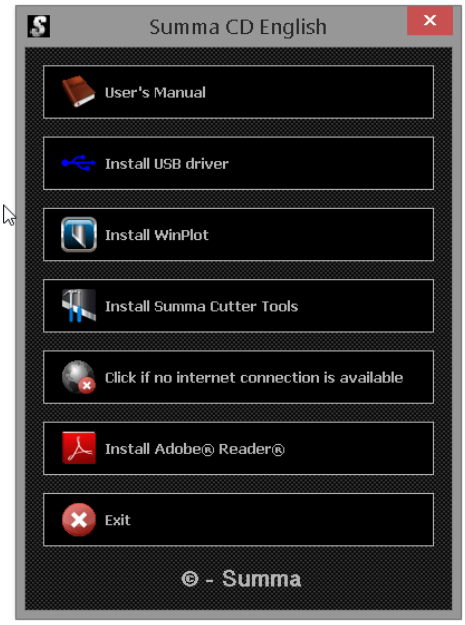
2 Installation of Cutter tools

2.1 Installation procedure

When the installation (manual) CD is inserted in the computer, then it normally starts automatically. If not, hit and . Type “D:\windows_start.exe” (where D is the CD-ROM drive).

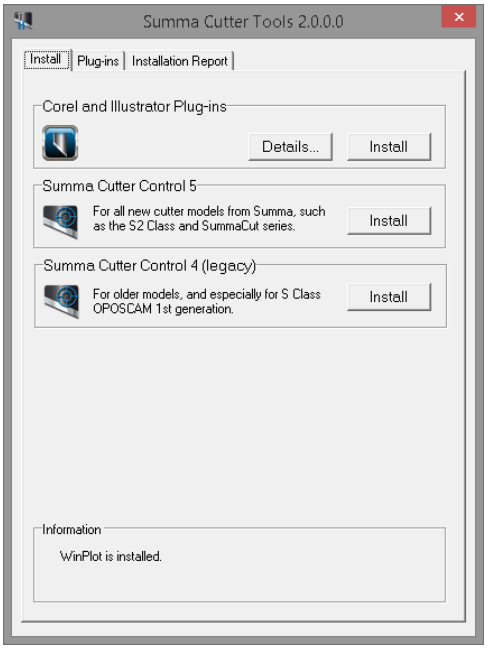


The start-up screen will appear with flags to choose the desired language. Choose a language. The following installation Window will appear:



NOTE: When installing Summa Cutter Tools make sure that the user has administrative rights and that UAC is deactivated.

Click on the button to start the installation of Summa Cutter Tools. The latest version will be downloaded from the internet before the installation can be started. If the program is downloaded directly from the internet, then just double click it in explorer.
If there is no internet connection available, then click on that button. The program will then be installed from the CD.
This installation will save all the tools on your hard disk first, ready for them to be installed. Then it starts the program so the tools can be installed. It is recommended to install the individual tools immediately afterwards.
The individual cutter tools can be installed at a later date. However it is possible that parts of the installation are blocked by Windows security settings.
To install later, click start -> All Programs -> Summa -> Summa Cutter Tools.



INSTALLATION OF SOFTWARE

If more than one version of CorelDRAW or Illustrator is installed, then it is recommended to install the plug-in version per version. In order to do this click on details and choose only one version, then click on the Install tab and click on install to install.

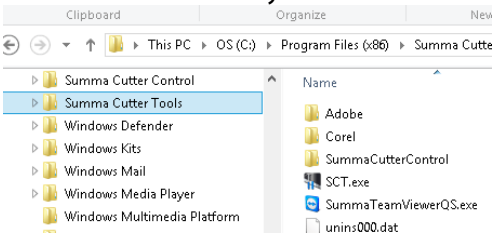
Summa Cutter Control 5 is applicable for the most recent models like the S2 Class and SummaCut series with black covers. Minimum revisions are for S2 Class: MD9981 rev 013; for SummaCut: MD9985 rev 025 and for S Class: MD9980 rev 039.
Minimum revision for the camera driver is 1.0.136. This version can be checked in the device manager or in the vidousb.inf file in the installation directory of the camera driver (C:\Program Files (x86)\Videology\Cameras) if the OPOCAM machine is not connected. When in doubt, just install the latest version from the internet (http://www.summa.eu/download/InstallOPOScamDrivers.exe).

NOTE: S Class OPOSCAM machines do not work with Summa Cutter Control 5; they need Summa Cutter Control version 4 in combination with Summa Camera Control 2.3. OPOSCAM machines of the first generation have a serial number that starts with a digit and have the letters T4 in de model name mentioned on the serial number label.

NOTE: Summa Cutter Control 5 does not have the option to connect through a serial port.

2.2 TeamViewer

TeamViewer is a program to remotely control any PC anywhere on the Internet. When Summa Cutter Tools is installed, then a small application is copied in the program files directory together with a shortcut in the Windows start menu directory.

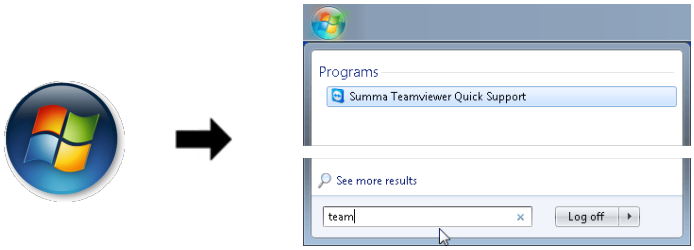


TEAMVIEWER APPLICATION IN PROGRAM FILES DIRECTORY

If the dealer has a licensed copy of the program TeamViewer, then the dealer can take over the computer of the customer if the customer gives the ID number and password number to the dealer.

TEAMVIEWER WINDOW

Teamviewer can be started from a shortcut in the program Cutter Control (see 4.2.6) or direct.
To start the application in Windows VISTA and Windows 7 Click on Windows start button and type "team" (without the quotes) in the search box. Then click on Summa Teamviewer Quick Support.



For Windows 8 hit the windows key and S simultaneously, then type "team" (without the quotes) in the search box. Then click on Summa Teamviewer Quick Support.

3 Plug-ins

3.1 Options in CorelDRAW

The Toolbar in CorelDRAW contains three icons.

The first icon is used to set OPOS markers around objects. If the icon is clicked, then following things happen:

- A new layer called 'Regmark' is created
- All objects in all unlocked layers are selected.
- OPOS markers of 3mm are put around them and an OPOS XY line is added at the bottom.
- The Regmark layer is locked.

If the second icon is clicked, then following things happen:

- The Regmark layer is temporarily unlocked (just for exporting).
- All objects in unlocked layers and in layers where the printing/exporting is not disabled are selected.
- All selected objects are exported to a temporarily file and this file is opened in WinPlot.
- The Regmark layer is locked.

If the third icon is clicked, then following things happen:

- All selected objects are exported to a temporarily file and this file is opened in WinPlot.
- The Regmark layer is locked.

> **NOTE:** Do not use the third icon when doing print and cut jobs, otherwise the markers will not be exported (see procedure in the user manual of WinPlot).
> After sending the objects to WinPlot, the Regmark layer is locked automatically even if the user unlocked it.

3.2 Options in Illustrator

The extra menu under file has three sub menu's.

The first sub menu is used to set OPOS markers around objects. Following things happen:

- A new layer called 'Regmark' is created
- All objects in all visible unlocked layers are selected.
- OPOS markers of 3mm are put around them and an OPOS XY line is added at the bottom.
- The Regmark layer is locked.

With the second sub menu following things happen:

- A check will occur in order to verify if all changes are saved in the drawing up to the moment where the script is started. If not, the file will be saved automatically. If the file has never been saved, then Illustrator will prompt the user for a file name.
- The Regmark layer is temporarily unlocked (just for saving).
- All objects in in all visible layers are selected.
- All selected objects are saved to a temporarily file and this file is opened in WinPlot.

With the third sub menu following things happen:

- A check will occur in order to verify if all changes are saved in the drawing up to the moment where the script is started. If not, the file will be saved automatically. If the file has never been saved, then Illustrator will prompt the user for a file name.
- All selected objects are saved to a temporarily file and this file is opened in WinPlot.

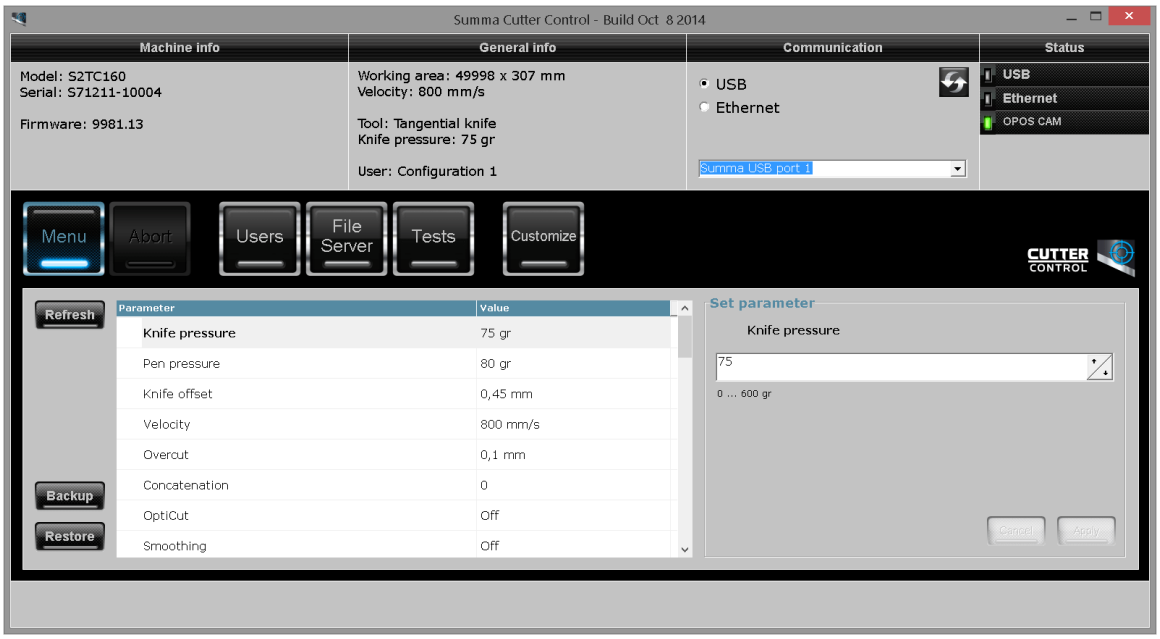
NOTE: The revert command in Illustrator does not work anymore straight after the design has been sent to WinPlot.

4 Summa Cutter Control 5

4.1 Introduction

The Summa Cutter Control program is a multifunctional tool for Summa Cutters it can:

- Control all parameters of the cutter.
- Perform tests.
- Send files to the cutter.
- Be used as a barcode server.



STARTUP WINDOW SUMMA CUTTER CONTROL 5

After starting up the cutter and the program, the window as above is displayed.
The top of the window contains info about the cutter.

Machine info: Displays the model, serial number and firmware revision.

General info: Info about size, loaded material, speed, main tool and pressure and current user configuration.

Status: This part displays the status of several items that are being monitored.

USB: can be green (while data is being sent) or black (no data is being sent).
Ethernet: can be green (while data is being sent) or black (no data is being sent).
OPOS CAM: Green if camera control is available. Orange if camera is in use. Red if camera is not ready or an error occurred. Black if no cutter with camera option is connected to port USB1.

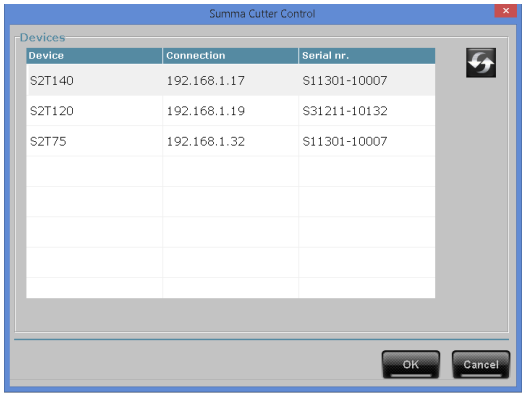
Communication: Use this to set up the connection.

When the radio button before USB is checked, then click on the arrow next to the dropdownlist to select the correct USB ID (1 to 4). The default USB ID is 1.
If the radio button before Ethernet is checked, then the program connects automatically to the last cutter it was connected to. Click

to select a cutter that is connected via Ethernet. A window opens and with a choice. Click on

to autodetect if any cutters are connected. Or click on

to input the IP address directly. If Cutter Control searches for the cutters connected to the Ethernet, it will return with the model number if no media is loaded in the cutter If there is media loaded in the cutter, then the model number and serial number will be displayed.

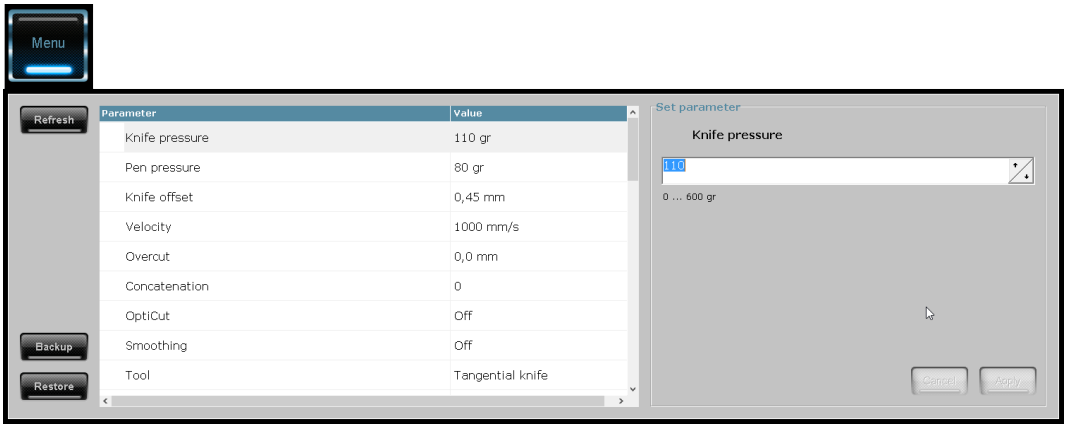


ETHERNET AUTODETECT WINDOW

4.2 Menu's in Summa Cutter Control

There are 5 main menus in Summa Cutter Control.

4.2.1 Menu



The menu is used to check/change the parameters of the cutter. If a parameter is changed, then it becomes bold in the list and the cancel/apply button is highlighted.

Click on the refresh button to get the current settings of the parameters.

Backup is used to store all parameters to a file. This is useful for storing a known good configuration (e.g. just after installation). Or to make a file to send to a service technician in order to diagnose the cutter.

Restore is used to send a backup file (previously saved or received from a technician) to the cutter.

Cancel is highlighted if a parameter has been changed. Click this button if the changes do not have to be sent to the cutter.

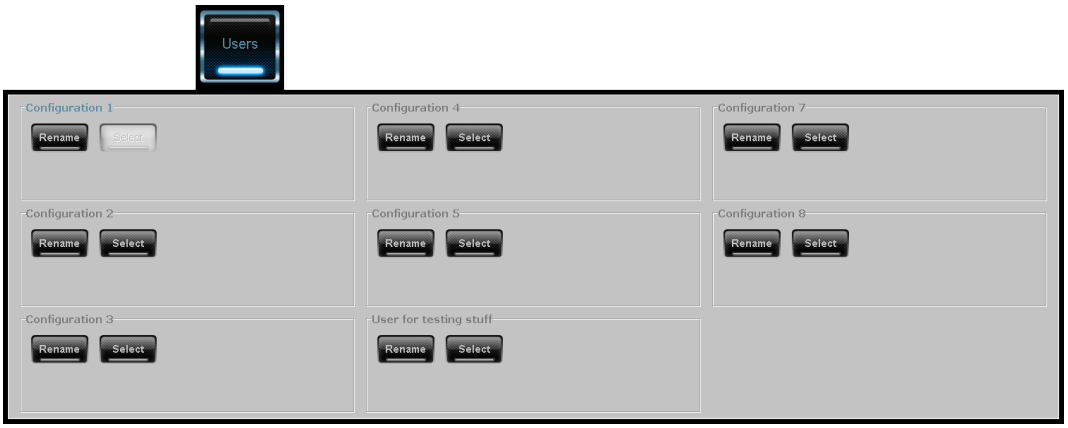
Apply is highlighted if a parameter has been changed. Click this button to send the changes to the cutter.

4.2.2 Abort

The abort button is highlighted when the computer is communicating with the cutter. Click the button to interrupt the communication.

ABORT BUTTON

4.2.3 User menu

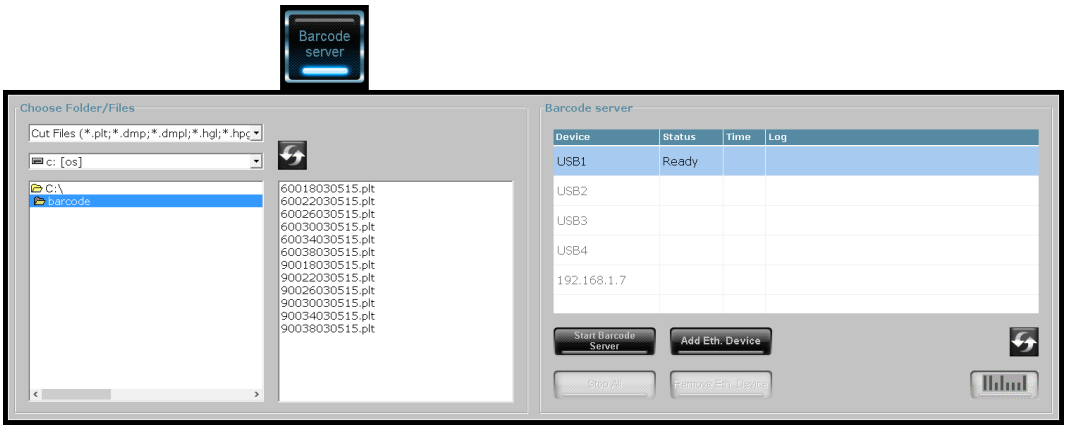


This is used to switch between different user configurations and to change the name of the users on S Class cutters. The SummaCut series have 4 different users. The S Class series have 8 different users.

Click the rename button to change the name of the configuration. It is recommended to use names that are easily recognizable, such as the media name or specific settings.

Click Select to change the current user.

4.2.4 Barcode Server



The OPOS sensor of the SummaCut and S Class cutters can read a special bar code. This is very useful in a print and cut workflow. The jobs may be on separate sheets or there may be multiple jobs on a roll.
Some print and cut software (RIP's) support this barcode code feature and its workflow completely. Other print and cut software only print out the barcode and make the file with the cut data (with the correct file name). They do not support handling the cut data files; they just send the cut data files to a queue on the hard disk. In this case the barcode server of Summa Cutter Control has to be used. Each job is printed out with a special barcode (that is legible by the OPOS sensor). This barcode indicates a job number. This job number is linked to a file with the cut data the rip made whilst ripping the job. If the barcode server of Cutter Control is started up, then it is continuously polling the communication port, that connects the cutter to the computer, for incoming jobnumbers. On receipt of a jobnumber, Cutter Control selects the correct file with the cut data and sends the data as a standard OPOS job to the cutter. After cutting the job, the cutter will scan for about 50cm after the job to check if another barcode can be found. In case another barcode is found, the entire procedure is repeated. In this way the whole roll can then be cut without intervention of the operator. The successive jobs on the roll may be the same or may be totally different.

First set the parameters in the left side of the window correct. Set the directory the same as the output directory for the cut data in the print and cut software. Also make sure that file type is set correct. Click on to refresh the list of files.

The buttons at the right side of the window have following function.

Click this button to activate the barcode server on the selected port.

Click this button to stop the barcode server on the selected port.

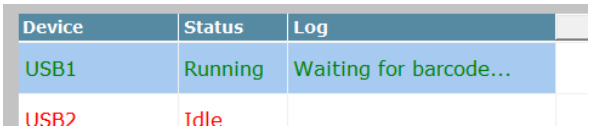
Click this button to stop the barcode server on all ports.

Add an Ethernet IP address where a cutter is connected to.

Remove an Ethernet IP address where a cutter is connected to.

Start reading barcode on cutter.

Refreshes the list of active cutters (active cutter has as status 'Ready').



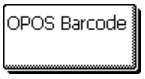
BARCODE SERVER ACTIVE

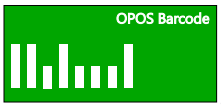
Choose the cutter where the jobs are loaded. Then start the barcode server. If the barcode server is active, then the status and/or error messages are displayed next to the port name.
Maximum number of cutters that may be connected are 4 through USB and 4 through Ethernet.

NOTE: Only one of these cutters may have the OPOSCAM option.

The whole barcode procedure can be started from the cutter or from cutter control.

To start from cutter control:
Click on .

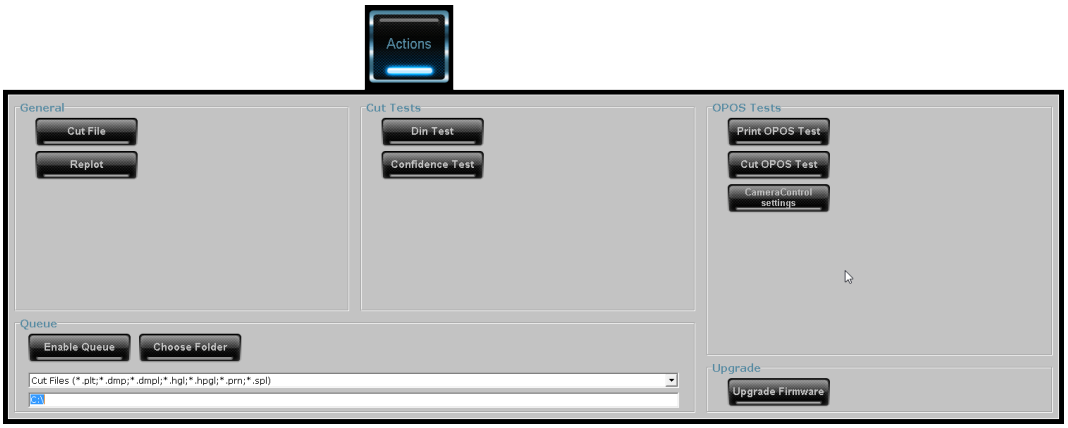
To start from the cutter:
For the S Class:
Press , then and finally 

For the S Class 2:
Press , then  .

For the SummaCut:
Press , then or till is visible then press .

After this a message on the cutter will appear to prompt the user to set the tool under the barcode.
Do so and then press .

4.2.5 Action menu



Click this button to send a file to the cutter. A window will open so the user can navigate to the correct folder to select the file to send to the cutter. Click OK to send the file

Click this button to repeat the last sent job. A window will open, the number of copies can be set. Then click OK to start.

Click this button to start a DIN test A sheet of at least size A3 has to be loaded in the cutter. The Confidence is a test used for a quick check of most of the cutter parts.

This button is to print out an OPOS test sheet. Acrobat reader opens a file that can be printed with a standard A4 desktop printer. This sheet can be used to check the OPOS calibration. OPOS calibration is media independent (it is a distance calibration of certain parts in the cutting head)

Load the OPOS test sheet that was printed in the cutter and click this button to start the OPOS test. A window will open to let the user choose between normal cutting pressure and 20 grs (for test on paper).

Click this button to change the settings for the camera on OPOSCAM machines. This option is grayed out when the connected cutter is not an OPOSCAM machine. See section 4.3 for more information.

Cutter control can also be used as a spooler it then monitors a directory for certain file types. If a file appears, it picks it up, sends it to the cutter and puts it in a separate directory. Cklick on this button to activate the spooler after that the file type and directory have been set correct.

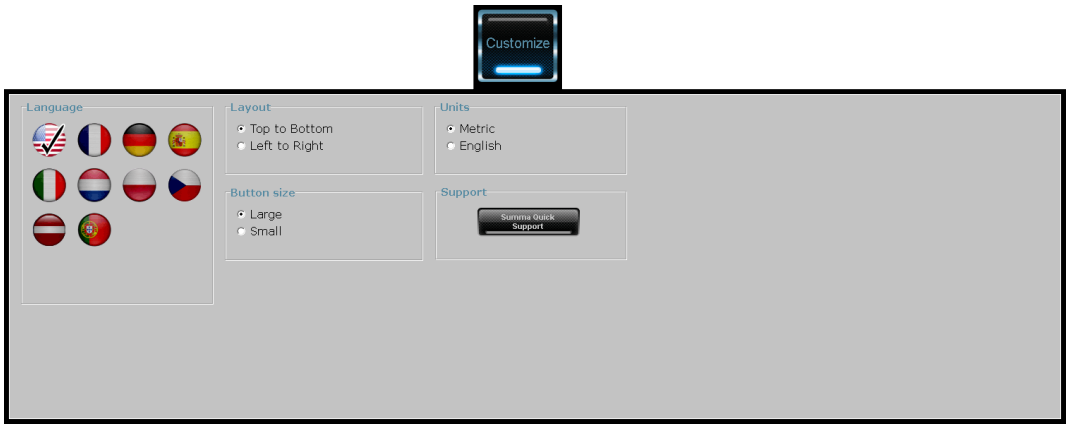
Click this button set the folder for the spooler function. A window opens so the folder can be chosen, set the file type correct with the drop down list below.

Click this button to upgrade the firmware of the cutter. Reboot the cutter first before upgrading. The firmware can be sent from a local disk or directly from the internet (click on

or

).

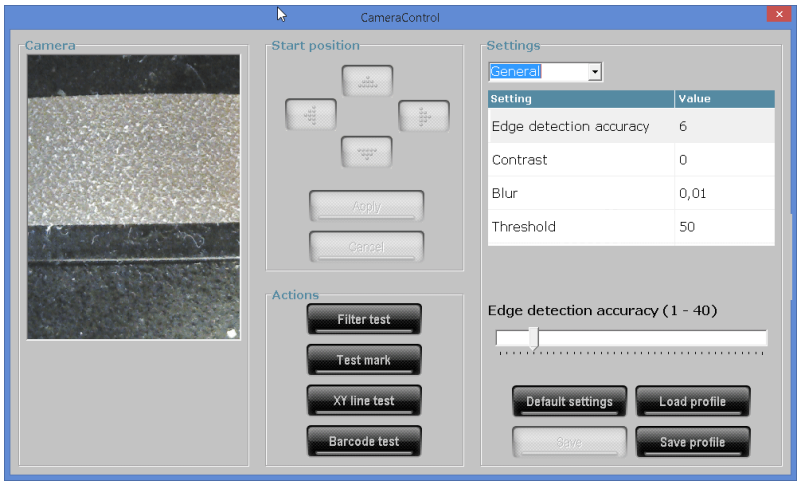
4.2.6 Customize menu



Here the language can be set by clicking on the language flag. Restart the program if another language has been set.
Also the units can be set here and some layout options are available, as well.
Click on

to start the teamviewer.

4.3 Camera settings



The camera is normally calibrated to detect black marks on white vinyl. Most other combinations of colors can also be detected with the standard settings. It is possible to adjust this standard settings to read less obvious color combinations of media and marks.

Click this button to view how the camera transforms the image into lines. Change the parameters to make the edges more visible (see below for explanation parameters). Use the arrows to move the camera over the media.

Click this button to test if the program can detect the mark; the parameters still can be changed if necessary. A green rectangle is drawn around the mark if it is recognized by the program. Use the arrows to move the camera over the media.

Click this button to test if the program can detect the OPOS XY line, the parameters still can be changed if necessary. A green line is drawn under the OPOS XY line if it is recognized by the program. Use the arrows to move the camera over the media. The parameter for the thickness of the XY line is located in the parameter list for the barcode.

Click the dropdownbox under settings to reveal the specific barcode parameters. Then click this button to check if the barcode can be read. The cutter will prompt the user to set the knife under the barcode. After that the barcode will be scanned. If the barcode is detected correctly, then a window will appear with the value that has been read.

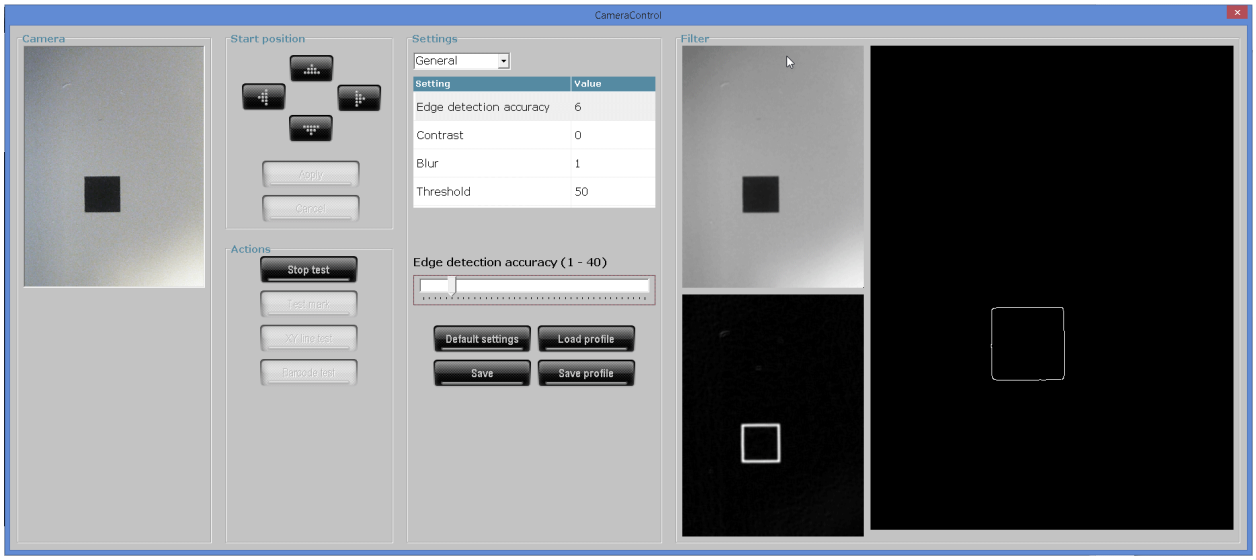
Click this button to stop the test.

Click this button to set all the parameters (both general parameters and barcode parameters) to their default value..

Click this button to save altered parameters (both general parameters and barcode parameters) to the cutter.

Click this button to open a file with specific parameter settings that was previously saved on the hard disk.

Click this button to save altered parameters on the hard disk. Use a specific file name to easily recognize why the settings were altered.



CAMERA SETUP SCREEN

If the settings need to be changed, then click on filter test to visualize how the parameter changes influence what the camera detects (or calculates with).
Click on the dropdownbox to choose between the general parameters and the specific parameters for reading the barcode.

General parameters:

Edge detection accuracy:
The program searches edges in the image. The more difficult it is to find these edges (blurred or interrupted) the higher the value this parameter must be set.
Gaussian filter:
With this parameter the image can be blurred. This can be used to eliminate possible noise in the image or in case the image was printed badly. Blurred images usually require higher edge detection accuracy also.
Contrast:
This parameter is used to switch between reading dark marks on light colored media and light colored marks on dark media.
Threshold:
The threshold level should be considered as the level that decides whether there is an edge or not. Pixels darker then the threshold level are considered as an edge and are shown on screen as part of a line. This way the image of pixels is converted into an image of lines.

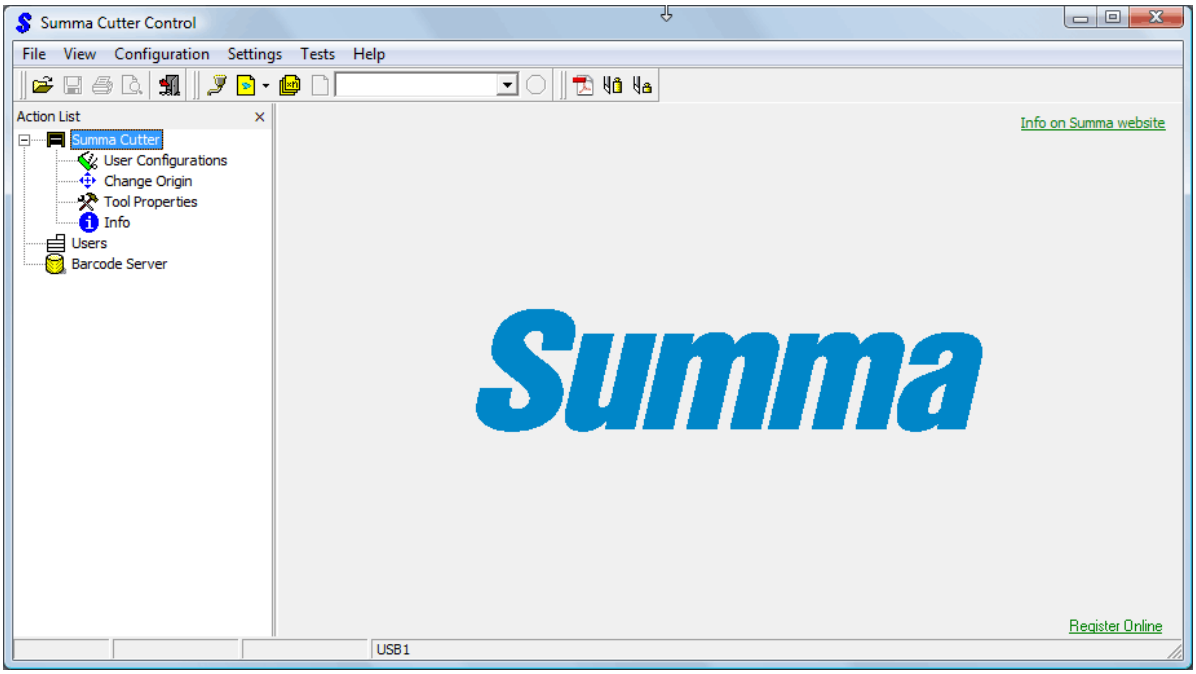
Barcode parameters:

Search velocity:
This is the speed at which the media is moved forwards while searching for the beginning of the barcode. It is also the speed at which the head is moving to the right to search for the mark to the right of the barcode. This speed has to be lowered if the computer cannot process the images fast enough.
Scan velocity:
This is the speed at which the barcode is read. It is recommended to leave the speed at its default setting.
Scan retries:
This is the number of times the computer tries to read the barcode before it reports that it cannot read it.
XY line width:
The standard line width of the XY line should be 1mm when used in combination with the barcode. However if the XY line has a different width, then this can be set here.

5 Summa Cutter Control 4

5.1 Introduction

The Summa Cutter Control program basically has the same functions as the control panel. It is up to the user to decide which way he will work most efficiently. The users who will work with the Summa Cutter Control program will notice that it is a very powerful and practical tool.
Summa Cutter Control version 4 is used for older Summa Cutters.

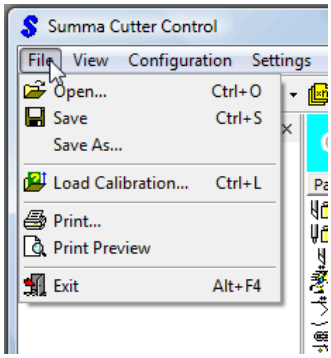


SUMMA CUTTER CONTROL 4 START SCREEN

5.2 Menu's in Summa Cutter Control

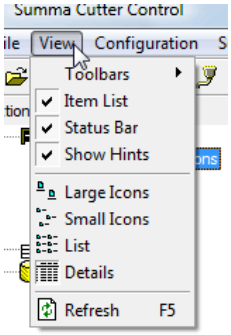
There are 5 main menu's in Summa Cutter Control. The help menu is only used for links to the site of Summa and for a revision check of the program.

5.2.1 File menu



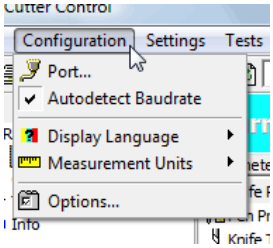
With the file menu, configuration settings can be saved on the computer and loaded from its hard disk. The options are only highlighted if a connection between the cutter and the computer has been established. This can be useful as back-up or for extra users. The print commands prints out the current settings for the cutter parameters and also a complete print out of the NVRAM of the cutter. The last item in this menu will exit the program.

5.2.2 View menu



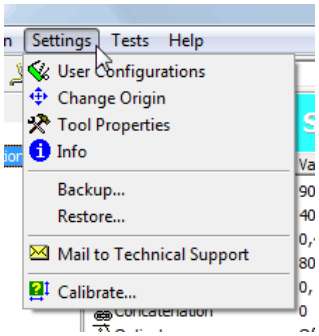
With the view menu, the appearance of the program can be changed. Some options are only highlighted if a connection between the cutter and the computer has been established.

5.2.3 Configuration menu



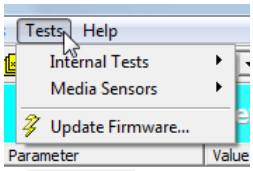
The configuration menu exists out of three parts. The first part sets the parameters of the connection. The parameters for the serial can be set independently from the general Window settings. If 'Auto detect baudrate is checked, then the program tries out all the possible speeds available. With the configuration menu, the language and units of measurement, which Summa Cutter control uses, can be changed. The option menu opens another window with extra options.

5.2.4 Settings menu



The settings menu can be used to display certain cutter parameters on the computer. These parameters can be changed and saved on the computer hard disk, and also in the cutter's memory.
This menu can also be used to make a backup of all the parameters or restore a backup (from the hard disk of the computer).
The settings can also be mailed to Summa.

5.2.5 Tests menu



The test menu is used for starting internal tests or updating the firmware of the cutter.

5.3 Tool bars

Summa Cutter Control has three toolbars.
The first toolbar has shortcuts to the most used commands under the File menu. All the icons in this toolbar are active if the settings have been read from the cutter.

This is used to open a previous saved menu file.

With this the current settings of the cutter can be saved to the hard disk.

This prints out all current parameter settings.

With this a preview of all the parameter settings can be viewed on screen.

Click exit to close the program.

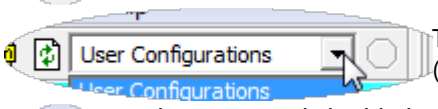
The second tool bar is a mix of much used commands.

This button opens a window for setting the connection parameters.

With this button, plot- and test files can be sent to the cutter.

This is the recut button. Any file that is currently in the memory of the cutter can be repeated a number of times with this command.

The refresh button re-establishes communication with the cutter and refreshes the parameter currently shown on screen.



This is a copy of the action list which can be seen at the left side (see section below).

This icon is only highlighted whilst Summa Cutter Control is communicating with the cutter. Clicking this icon interrupts the connection.

The third tool bar is used to test OPOS.

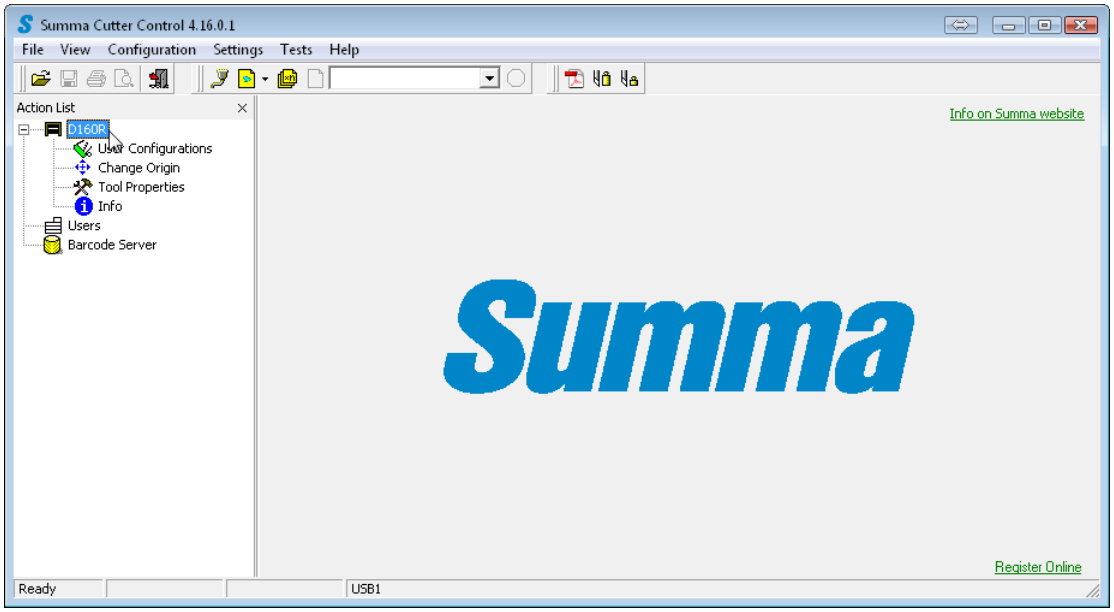
Click this icon to print out an OPOS test file (works only if Adobe reader is installed on the computer).

Click this to send the cut data for the OPOS test file to the cutter.

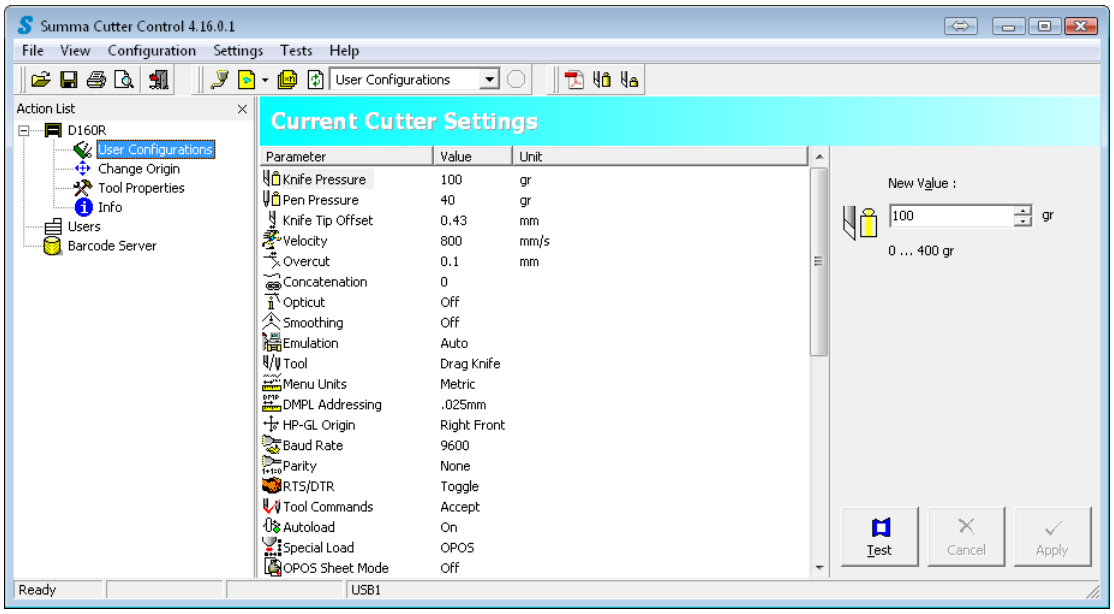
This icon will send the OPOS test file to the cutter and reduce also the pressure to 20grs. This can be used if the test pattern is printed out on normal paper. The OPOS test pattern is media independent.

5.4 Action list

The left part of the Window gives an overview of the action list.

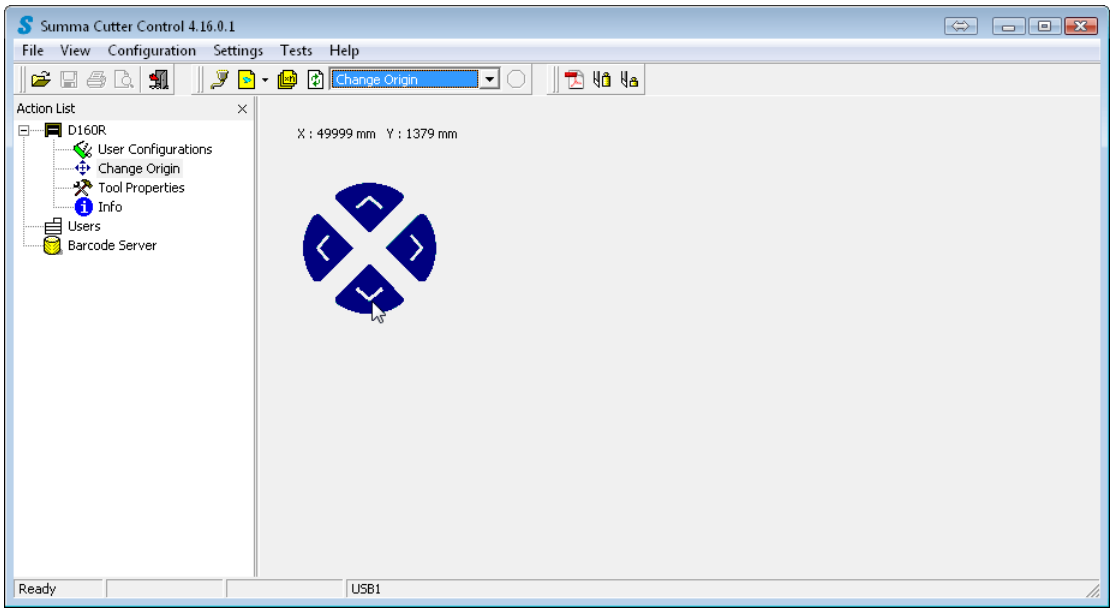


5.4.1 User Configurations



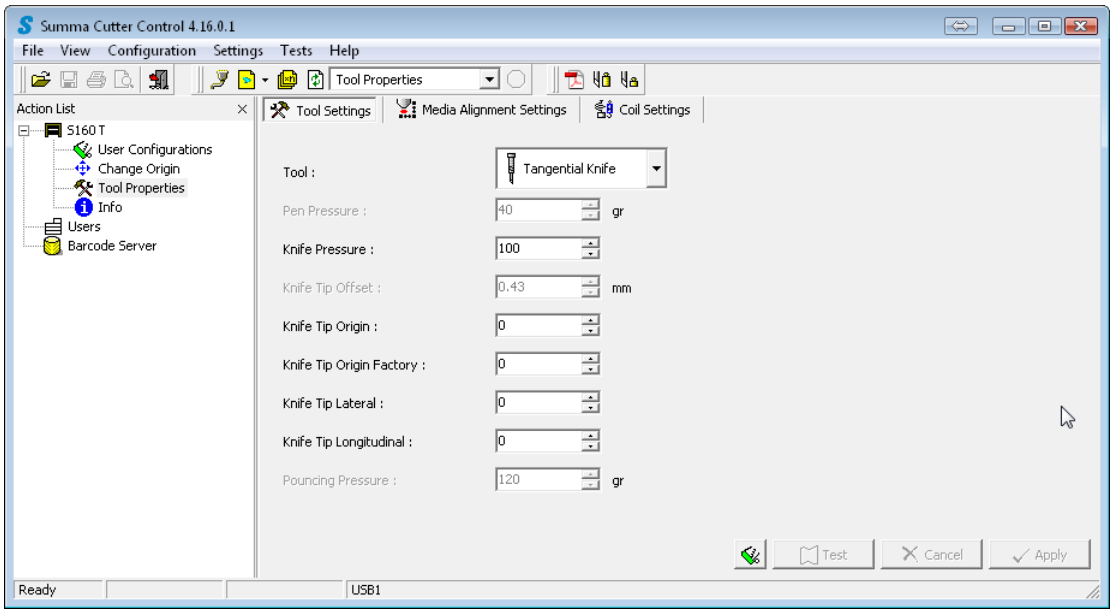
Click User Configuration to have a complete overview of the cutter's parameters.
Select a parameter to change it. Change the value at the right side of the window. Click Apply to confirm and send the new parameter to the cutter. Some settings can be tested with a small internal cutter test.

5.4.2 Change origin



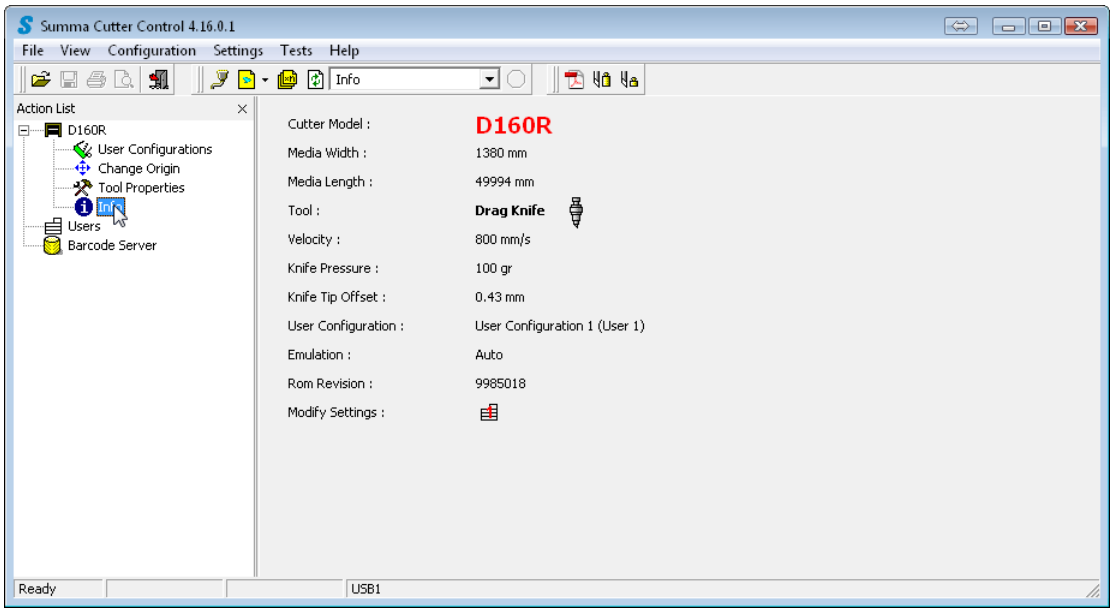
This is used for older cutter types which have no screen on the cutter itself to facilitate modifying the origin. Click on the arrows to change the origin.

5.4.3 Tool properties



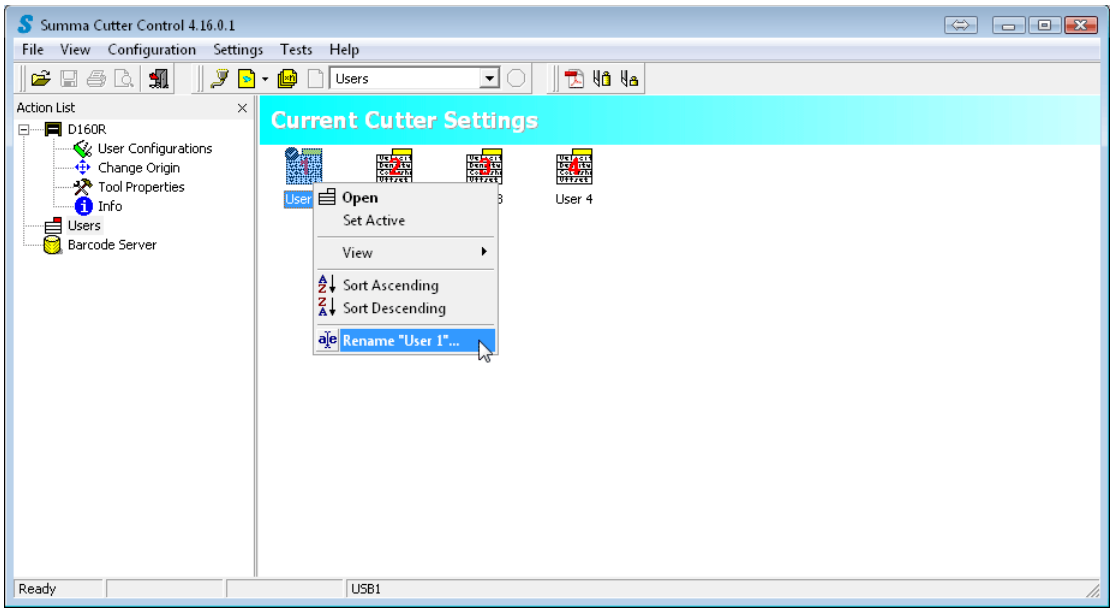
The tool parameters give a quick overview of the most important tool parameter. Again some of those parameters can be tested out with an internal test to check if the chosen value is correct. The parameters grouped here have a great impact on the cutting quality. Be careful when changing them.

5.4.4 Info



Click info to have an overview of the cutter model firmware revision and most common parameters. This is very useful to identify the machine when calling support. If the shift key is held down while clicking info, then the serial number of the machine is also shown.

5.4.5 Users



This is used to switch between different user configurations and to change the name of the users on the cutters. Double click in order to change the user. Right click and choose rename in order to change the name for the user. The SummaCut series have 4 different users. The S Class series have 8 different users.

5.4.6 Barcode Server

NOTE: The barcode server of Cutter Control 4 can only address one cutter. If more than one cutter needs to be driven, then upgrade to the latest version and use cutter control 5.

NOTE: The barcode does not function with OPOSCAM machines of the first generation S Class (T4 mentioned in model name - serial number starts with a digit).

The OPOS sensor can read a special barcode. This is very useful in a print and cut workflow. The jobs may be on separate sheets or there may be multiple jobs on a roll.
Each job has to be printed out with a special barcode (that is legible by the OPOS sensor). This barcode indicates a jobnumber. This jobnumber is linked to a file with the cut data that the rip and print software made whilst that the job was ripped. On the computer a kind of **'Barcode server'** should be running, polling the communication port that connects the cutter to the computer for incoming jobnumbers. On receipt of the jobnumber, the software should select the correct file with the cut data and sent the data as a standard OPOS job. OPOS will start scanning the job (with the OPOS information it received in the file) and cut the contours. After that the cutter will scan for about 50cm after the job to check if another barcode can be found. In case another barcode is found, it is read and the whole procedure repeats itself. In this way the whole roll can then be cut without intervention of the operator. The successive jobs on the roll may be the same or can be totally different.
Some print and cut software support this barcode code feature and its workflow completely. Other print and cut software only print out the barcode and make the file with the cut data (with the correct file name). They do not support the reading of the barcode and the handling of the different cut data files. In this case the barcode server of Summa Cutter Control can be used.

Click on Barcode server. The right side of the window shows all the options of the barcode server. First the directory has to be set where the files with the cut data are set by the print and cut software. This can be a local driver or a network driver. The figure below shows the default directory that Summa Cutter control uses. Use this directory if the barcode option of the cutter has to be tested. This can be used for testing the barcode server (see later). The extension of the files with the cut data can also be set (click the dropdownbox and select). This directory and the file extension have to be set in the same way as in the print and cut software.